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April 21, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W. Room 222
Washington, D.C. 20554

Attn: Wireless Telecommunications Bureau

Re: WT Docket No. 97-81

Dear Mr. Caton:

The Washington Suburban Sanitary Commission is pleased to have the opportunity to submit comments is response to the FCC's Notice of Proposed Rule Making, WT 97-81, dated February 19, 1997, regarding amendment of the Commission's rules regarding Multiple Address Systems. As a large public service utility with a significant investment in and dependence on communications infrastructure, we wish to express our thoughts, concerns and recommendations on this topic.

The Washington Suburban Sanitary Commission, established in 1918, provides water and wastewater services to over 1.5 million people. Our 1000 square mile service area encompasses the two Maryland Counties surrounding the Nations Capital, Montgomery and Prince Georges. To meet our customers' expectations, the WSSC operates and maintains approximately 200 facilities, including water and wastewater storage facilities, pumping stations, and treatment plants.

Operation of remote facilities and coordination of personnel requires enormous investment in wireless technology and available spectrum resources to provide safe and reliable public service. The WSSC has invested millions of dollars in MAS related infrastructure to assist in system automation and supervision of our remote facilities. Without available and protected spectrum, providing dependable and responsible water and wastewater services would not be possible.

After careful consideration of WT Docket 97-81, we felt that the interests of ourselves and those similarly situated warranted comments on a paragraph-by-paragraph basis. Again, we are pleased to have this opportunity to comment and thank you for your consideration.

EXECUTIVE SUMMARY

Since the inception of the MAS service in the early 1980's, utilities have invested millions of dollars in MAS technology to provide reliable, cost effective supervision and control of remote facilities. This technology is the primary,and in many cases, the sole method of monitoring and controlling diversely located facilities. As consumer rate pressures and environmental concerns continued to grow, so has the demand for MAS spectrum and technology.

WT Docket No. 97-81, Amendment of the Commission's Rules Regarding Multiple Address Systems, has the potential impact of undermining the reliability and efficiency of the existing MAS systems so widely depended upon by utilities and other entities. It also has the potential impact of inhibiting prudent system expansion and development for new and incumbent systems alike. After careful analysis of the Docket, and the MAS climate in general, we wish to register the points of contention which follow.

* The tentative conclusion that the 932/941 MAS bands should be designated for subscriber-based services is based upon misleading data, and should be reexamined. It is predicted that the demand for MAS spectrum to provide subscriber-based services will be greatly diminished with the institution of spectrum auctions.

* The 932-932.5/941-941.5 MHz bands were reallocated for MAS use in 1989 to ease the deficit of MAS channels caused by the exhaustion of the 928/952 MHz MAS channels in many areas. The demand for MAS channels, suitable for private internal communications, has continued to increase steadily.

* The proposal to define service areas based upon the U.S. Department of Commerce's Economic Areas plan for geographic licensing of subscriber-based services is reasonable only if geographic licensing becomes mandatory.

* The proposal to set aside five channels in the 932-941 MHz band to be licensed on a first-come, first-served basis for Federal Government and Public Safety operations is inadequate. The proposal also fails to address the needs of quasi-public safety entities which operate and preserve the Nation's infrastructure.

* In contrast to the PCS service, the proposal to set aside MAS channel pairs in the 932/941 MHz band exclusively, for regional or nationwide use, can not be justified by an expected demand for regional or nationwide MAS service. As such, reserving valuable channels for this purpose inhibits efficient spectrum usage.

* The proposal to allow applicants to aggregate channels without a showing of need encourages spectrum warehousing and speculative activity.

* The proposal to allow geographic licensees to make major system modifications without prior coordination and notification requirements invites immeasurable and unpredictable harm to incumbent operations.

* Geographic licensing lacks the flexibility necessary for spectrally efficient private system licensing.

* The proposal to lift existing operational restrictions in the MAS bands will circumvent the original intent of this service and breed operational chaos.

* The proposal that liberal construction and coverage requirements will promote rapid deployment of technologies and services will probably have the opposite effect.

* The proposal to allocate the 928/959 MHz band exclusively for subscriber-based services will create a hardship for applicants requiring 928 MHz channels for technical reasons, whom can not obtain a license for 928/952 MHz channels.

RECOMMENDATIONS

* The allocation of new MAS spectrum should be modelled after the actual functional objectives of existing licensed and constructed systems and not the speculative proposals contained in the 1992 applications.

* A number of channels, equivalent in percentage to those used for private internal communications in the 928/952 MHz band, should be made available in the 932/941 MHz band for additional private internal communications.

* It is preferable to retain the existing site-by-site licensing for all MAS users. While geographic licensing eases administrative burdens, it is not necessarily as spectrally efficient as site-specific licensing. EA licensing will result in a lower concentration of channel usage in particular areas than site-specific licensing.

* Site specific licensing provides the needed agility to conform to the specialized needs of private systems, and should be retained for all MAS operations, but most crucially for private systems.

* We recommend a set-aside of a minimum of ten channels, the first five to be available exclusively to Federal Government and Public Safety operations, as proposed. The additional channels are to be available to Federal Government and Public Safety operations, if the frequencies in the exclusive pool are exhausted in a particular area, and to quasi-public safety entities on a first-come, first-served basis.

* We do not agree that there is a projected need or application for MAS channels on a regional or national basis, and to create such a set-aside would deprive potential local area licensees of access to valuable spectrum.

* Spectrum should be licensed in units of 12.5 KHz bandwidth or less and licensees should be entitled to aggregate additional bandwidth upon the availability of contiguous channels and provision of a satisfactory showing of need.

* EA licensees should be required to perform frequency coordination activities and prior coordination notification before making any modification to their system which would constitute a "Major Modification" under Rule Part 101.57. Mandatory on-the-air interference testing with incumbent operations should be completed before a grant of permanent authorization.

* The MAS spectrum should be reserved for the exclusive use of point-to-multipoint fixed service operation on a primary basis. Mobile operation of master radios should continue to be authorized on a low power secondary basis. Mobile operation of remotes is contrary to the intent of the Fixed Microwave Service and for potential interference and compatibility reasons should not be authorized, except by waiver on a secondary basis. Mobile service on a primary basis is properly allocated in other services.

* We believe that construction and loading benchmarks need to be mandated to assure that the spectrum is being efficiently used and that the public interest is being served. Some flexibility could be achieved by establishing several satisfactory alternative guidelines, any of which, when met, constitute acceptable progress.

* We recommend that the 928/959 MHz band remain subject to the current Rules, allowing inter-service sharing with Part 22 users.

* The conclusion that the 928/952/956 MHz MAS bands should be designated exclusively for private use is congruent with the principal use of channels in these bands. Incumbent licensees using channels in these bands for other than private internal communications should be subject to mandatory relocation schedules. Grandfathering should not be permitted.

SPECIFIC COMMENTS ON DOCKET WT 97-81

Background Paragraph 4

Since the inception of the MAS service in the early 1980's, utilities have invested millions of dollars in MAS infrastructure to perform supervisory control and data acquisition (SCADA), load management, and distribution automation operations of multiple remote facilities. This technology is the primary, and in many cases, the only method of monitoring and controlling diversely located utility system components. The migration to MAS is driven by industry pressures to reduce labor and material costs, tighter environmental controls, and unreliable, obsolete, alternative communication mediums.

With the proliferation of 931 mHz common carrier paging established under Rule Part 22.531, authorized a maximum of 3500 watts ERP, MAS systems in major metropolitan areas began to suffer reliability problems caused by overwhelming interference.

With the proliferation of 929 mHz private carrier paging under Rule Part 90.494, authorized a maximum of 3500 watts ERP, increases in the noise floor and interference has rendered portions of many MAS systems in major metropolitan areas became unusable.

The above paging examples illustrate the consequences of placing incompatible services spectrally in vicinity of one another. It is obvious that the technical ramifications of locating these high power paging services adjacent to the low power MAS remote response band was not considered.

Background Paragraph 7

The conclusion that the 932/941 MHz and 928/959 MHz MAS bands should be designated for subscriber services is based on misleading premises. Although 50,000 plus applications for the forty channel pairs in the 932-932.5 and 941-941.5 mHz bands were received and over 95 percent were filed by applicants seemingly proposing to provide subscriber-based service, one should not conclude that the public interest is necessarily being served by recharacterizing this spectrum as a commercial service.

A fundamental reason for originally designating this spectrum for MAS use was that the F.C.C. recognized the need to relieve the demand created by the exhaustion of the 928-952 mHz MAS channels. There is still a tremendous shortage of MAS frequencies to satisfy utility requirements today.

As a first-come-first-served methodology was selected to award licenses in the 932-941 band, any informed investor with the $155.00 filing fee in his pocket could apply for a license, having the same chance of selection as a bonafide prospective MAS user. The similar selection process for the 800 MHz SMR licenses demonstrated the potential of financial benefit to a speculator for being awarded a license. A major portion of the 50,000 applications received were undoubtedly filed by speculators and entrepreneurs hoping to make money by receiving royalties for use of the licenses, as most individuals applicants do not have the financial resources to assemble and operate a subscriber based

service.

Utilities are reluctant to relinquish control and engage outside interests to provide critical services such as SCADA. There is no universal consumer appeal or demand for MAS service, so one would question whom the speculative applicant's customer base would be comprised of.

All applications do not further the Public Interest equally. An application from a utility requiring spectrum to provide reliable service to millions of rate-payers is exponentially more beneficial to the public than an application from an individual entrepreneur proposing to provide a speculative service to a hypothetical customer base.

Discussion Paragraph 8

The equipment, technology, and applications for MAS have become more advanced since the 1980's and the demand for private MAS channels continues to grow. In major metropolitan areas, the supply of MAS channels has been exhausted for years. Applying the present 90 mile protection criteria and voluntary short-spacing agreements seems to provide efficient use of the limited spectrum on a non-interfering basis. Site-specific licensing for private users is less complicated and more efficient than its geographical area licensing counterpart, particularly in metropolitan areas with multiple applicants.

Spectrum Allocation Paragraph 9

There are no non-Federal licensees in the 932.5-941.5 mHz spectrum because of the F.C.C. freeze on application processing after the close of the 1992 filing windows. This is not to be construed as there being no longstanding or current demand for these channels. The 928.85-929 mHz and 959.85-960 mHz channels are also exhausted in major metropolitan areas.

Paragraph 10

See response to Background Paragraph 7 previously.

Paragraph 11

See response to Background Paragraph 7 previously. In regard to other spectrum allocations, a cursory check of licensing in the 932.5-935/941.5-944 MHz point-to-point band seems to be underutilized in many parts of the country and could feasibly supplant exhausted MAS channels.

Paragraph 12

Many of the channels within the 928-928.85 and 952-952.85 mHz bands, including the original Power Radio Service channels, have been licensed by entrepreneurs to provide subscriber service to a speculative customer base. Many of the 956.25-956.45 mHz channels are licensed to paging companies as simulcast links. 100 percent of these channels could be consumed satisfying the internal communications needs of public safety, business, and industrial entities if there was no conflicting competition from for-profit private carriers, and the demand for additional channels will still not have been met.

Paragraph 13

The conclusion that the 928/952/956 mHz bands should be designated exclusively for private, internal use as originally intended, is laudable, and long overdue. A more narrow and specific definition of private internal use needs to be promulgated. It is necessary to distinguish those applicants whom use this spectrum exclusively for internal purposes, without any fee-for-service access relationship to outside entities, from others where this relationship exists.

Many entities, such as central alarm and vending machine monitoring companies, which use this spectrum as an integral part of their end product, are licensed as private internal users. It is important to note that these entities have a fee-for-service relationship with customers in which the customer benefits from subscription-based access to the provider's facilities. This is normally achieved using equipment supplied by the provider at the customers' premises. These entities are selling a service incorporating the use of radio rather than selling radio service itself but should appropriately be considered private carriers.

In metropolitan areas, several MAS channels are currently licensed to subscriber-based carriers. Guidelines to relocate these private carriers to share common carrier spectrum should be promulgated as quickly as possible to minimize hardship claims made on behalf of the affected parties.

Paragraph 14

Geographic area licensing provides the advantages of reducing administrative burdens and simplifying system expansion for subscriber- based services, but may viewed as anti-competitive as it also makes obtaining frequencies more difficult for newer or smaller applicants in the same service area. Geographic area licensing is not practical for smaller or private systems which do not have the need or resources to adequately cover such large regions. Providing service to an entire region in not normally an objective for a private user and partitioning or diasggregation may not be technically or administratively feasible or desirable.

The five channel pair set-aside for Federal Government/Public Safety use is commendable, but inadequate. As MAS technology continues to find future applications, these sectors will likely benefit, creating additional demand for channels.

Paragraph 15

It seems reasonable to employ geographic area licensing in situations where the applicant can demonstrate a demand and ability to provide substantial service to the entire region in question. Therefore, in exchange for the latitude to provide service in a particular area with minimal regulatory restraints, the applicant must accept the burden of providing satisfactory service to the entire region subject to build-out requirements.

Subscriber based services do not provide an acceptable level of availability required for many applications, particularly in the Public Safety/Public Service/utility industries. As such, it is questionable how prolific subscriber-based MAS service is really likely to become.

Private systems are typically implemented to achieve a specific internal operational objective. The objective is usually a function of service area and does not necessarily coincide with geographical or political boundaries. As such, licensing a private system for coverage in an EA, BTA, or other region when the system may only require coverage some arbitrary distance around a defined point is not efficient spectrum policy.

If Part 101 shall continue to govern the radio spectrum above 928 mHz., all use of that spectrum, including Part 22 and 90 services should be consolidated within Part 101 to prevent incompatible services from being allocated adjacently. An example of this oversight is evident in the placement of the MAS and paging services mentioned previously in Background Paragraph 4.

Paragraph 17

We concur that EA's are only a suitable choice if geographic licensing of subscriber-based MAS systems is mandated. However, an alternative to solely licensing EA's to applicants would be to allow incumbents, as well as new applicants, to continue to apply for licenses on a site-specific basis, and as systems develop that serve an EA, consolidate those licenses for geographical licensing.

We do not agree, however, that EA's mirror the size and development of existing private MAS systems. Private systems have a size and shape tailored to the particular internal business objectives of the licensee.

Paragraph 18

The PCS radio service was conceived as a regional to nationwide service. Proponents of a nationwide MAS service should be able to identify suitable spectrum in other services, such as the narrowband PCS band. Allocating channels exclusively for regional or nationwide use seems inappropriate and contrary to the intended application and scope of the MAS radio service.

Paragraph 19

The existing protection criteria cited offers some resistance to co-channel interference, but offers no immunity from decreased channel quality and fade margin due to the increased noise floor and receiver overload from adjacent channel or neighboring channel transmitters.

Paragraph 20

The service radius for protection purposes should take into consideration the distance to the radio horizon as a function of antenna height, not an arbitrary assumed distance. In F.C.C. Public Notice 1301 dated December 6, 1985, the service radius in miles was to be calculated as equal to the square root of two times the antenna height in feet. In any case, the protection criteria should be responsive to the needs of the incumbent operation.

Allowing incumbents the flexibility to modify existing systems as long as the signal level is not increased beyond their licensed service area, (not arbitrarily 25 miles), is in the public interest. A protection criteria in terms of signal strength contour is favorable as long as the value chosen is conservative

and protects the incumbent at all times.

Paragraph 21

The licensing approach proposed could provide many of the administrative benefits cited in the paragraph. This proposal could aslo result in unpredictable immeasurable harm to other systems. Due diligence must be afforded to protect the incumbents.

Paragraph 23

In major markets, potential applicants have been waiting years for an MAS frequency pair to become available. To arbitrarily transfer spectrum from an incumbent to an EA with cancellation of the incumbent's license, is a disregard of the spectrum needs of other private systems.

Paragraph 24

Spectrum limits are in the public interest. Minimum loading requirements should also be a prerequisite for retaining existing spectrum and obtaining additional channels.

Paragraph 25

The failure to impose aggregation limits will foster the development of a new monopolistic industry: spectrum resellers. This will have the effect of preventing entities with limited financial resources from obtaining licenses. These less affluent entities will be forced to lease spectrum or carrier service from the license holders, which may not be financially possible.

Operation of mobile remotes seems contrary to the intent of the Fixed Microwave Service. Operation of mobile remotes should be only permissible on a secondary basis after grant of a rule waiver.

Paragraph 27

While partitioning may provide opportunities for small or disadvantage businesses to participate in the provision of subscriber-based services, it is unlikely that the applicants awarded licenses are willing to allow such participation voluntarily solely motivated by generosity. This arrangement may be a precursor to failure of the small business.

Paragraph 28

The partitioning participants should be jointly and severably responsible for meeting the build-out and substantial service deadlines as if there was no partitioning arrangement.

The key issues unique to MAS which may impede implementing a broadband PCS style partitioning arrangement are the elevation of the fixed subscriber antennas and coverage overlap. The MAS service also lacks the consumer demand that PCS was designed to satisfy, therefore, subscriber distribution will probably be less uniform.

Paragraph 29

See Paragraph 28 above.

Paragraph 30

Permitting disaggregation may promote spectral efficiency for provision of subscriber service.

Paragraph 31

The parties of a disaggregation arrangement should be jointly and severably responsible for meeting construction and substantial service requirements, and other terms of the original authorization.

Paragraph 32

See Paragraph 31 above.

Paragraph 33

Providing both partitioning and disaggregation may promote spectral efficiency for provision of subscriber service. All parties to the agreements should expect for all terms of the original authorization to apply to them jointly and severably.

Paragraph 35

Applicants should employ independent due diligence to determine the viability of their business plan in all EA's that they are pursuing.

Paragraph 38

Some sort of defined construction and loading benchmarks need to be mandated to prevent the spectrum inefficiencies outlined in the paragraph. Perhaps establishing several different but equivalent methodologies, accepting any of which that when satisfied, could define reasonable construction progress.

Paragraph 39

Unlike cellular and PCS, there is not a universal consumer demand for MAS service. As a result, determining substantial service based upon coverage to the public is not meaningful if there is little demand for the service. Failure to meet some substantial service guideline should be evidence that the public interest is not being served and the authorization should terminate.

Paragraph 40

Applicants should be able to aggregate multiple channels, subject to spectrum caps, after providing a documented showing of need. Failure to require a showing of need encourages warehousing and resale of spectrum; being not necessarily in the public interest. Applying bandwidth flexibility to the incumbents would be in the public interest if a documented showing of need were required. The spectrum should be licensed on a per 12.5 KHz or less channel basis and aggregated by the licensee as required.

Paragraph 41

While non-point-to-multipoint operations may be allowed on a limited, secondary basis, the MAS spectrum should be used only on a point-to-multipoint primary basis. Applicants proposing other operations on a primary basis should consider other radio services where the proposed method of operation is the accepted standard of operation.

Paragraph 42

The proposal to allow other than point-to-multipoint operations is contrary to the intent of the MAS band. The predicted result of this excessive flexibility will be interference and universal chaos at the expense of all licensees, including those responsible for safety and protection of the nation's infrastructure. It is not good spectrum management policy to expect the MAS band to fulfill the needs and objectives of several other radio services at the expense of those using the band for its original allocation, fixed point-to-multipoint service.

Paragraph 43

Communication between mobile masters and fixed remotes is spectrally efficient due to the low emissions required. Mobile remotes should be only be allowed on a secondary basis, after receipt of a rule waiver, because those needs are more properly addressed in the mobile radio services.

Paragraph 44

Determination of regulatory status should be clearly defined by the presence or absence of a fee-for-service relationship between the licensee and any subscribers of the licensee's services. Licensees whom provide a service using radio spectrum to subscribers, even though the communications service itself may not constitute the end product, should be subject to telecommunications carrier regulations. Typical examples of such a relationship would be central alarm and vending monitoring services which use MAS radio to provide the subscriber alarm or status information.

The proposal to establish a presumption that all MAS geographic area licensees are telecommunications carriers is inaccurate, and will be particularly flawed if private systems are mandated to become geographic area licencees.

The determination that the 928/952/956 MHz bands are private and the ability for interested parties to challenge the regulatory status of any MAS licensee would stimulate operation of bonafide applicants and reduce speculation.

Paragraph 45

Licensees should be required to notify the Commission and include evidence of frequency coordination and interference protection if they propose major changes to the character of their

original authorization, as is currently in Rule part 101.57.

Paragraph 49

See Background paragraph 7 response previously.

Paragraph 50

Frequencies in the 928/952/956 MHz bands are predominantly occupied by private entities to satisfy their internal communications needs and by several subscriber-based alarm monitoring services.

Paragraph 51

See Background Paragraph 7 response previously. Many entites such as utilities and governmental entities have a tremendous demand for MAS spectrum. However, because they intend to use the channels for internal communications and are of limited financial means, they are not competitive in the auction arena, even if they value the spectrum more highly than a common carrier.

Paragraph 52

In consideration of the fact the 932/941 MAS band was allocated to provide relief for the exhausted 928/952 MHz band, it may be in the public interest to reexamine those applications which do not propose to provide subscriber service. Those applicants could be invited to reapply for participation in a lottery for a limited number of channels to satisfy some of their internal requirements not previously met. The balance of the channels could be made available for auction. Another alternative worth considering is to reallocate any unlicensed frequencies remaining at the close of the auction for private use, subject to award by lottery or some other method.

Paragraph 57

In major markets, potential applicants have been waiting many years for any MAS frequencies to become available. In many cases, business plans were put on hold awaiting spectrum relief; or, less desirable alternative methods of fulfilling communications requirements have been employed by necessity.

Paragraph 58

The decision to use competitive bidding is also contrary to the expectations of the remaining five percent of applicants who in good faith, expected to attain MAS licensees critical to their internal operations.

Paragraph 59

Simultaneous multiple round bidding has proven effective in other auctions.

Paragraph 60

Qualifications as a small business in the MAS service should mirror the definitions employed in the PCS and WCS services.

Paragraphs 61 and 62

Provisions for small business in the MAS service should mirror the those employed in the PCS services.

Paragraph 63

Unjust enrichment guidelines should mirror those used in the WCS service.

Paragraphs 65 and 66

The set-aside for Federal Government and Public Safety is commendable, but inadequate. As MAS technology finds more applications in these markets, the demand will exceed the supply. Use of this spectrum should be encouraged to be point-to-multipoint operations rather that paging, or voice applications which can be satisfied in other spectrum.

Paragraph 67

Mobile operation, particularly for law enforcement mobile data systems, may be allowed on a secondary basis by waiver, to fixed applications. Each political subdivision of substantial size could benefit from use of at least one MAS channel. As such, channels should be available on an exclusive first-come-first-serve basis to either Federal or Public Safety applicants.

CONCLUSION

The WSSC is of the opinion that the current MAS rules have promoted efficient use of the existing spectrum by private users. The MAS service is specialized in nature, and unlike PCS or cellular service, lacks a universal consumer demand. To apply regulatory treatment to the MAS service similar to cellular or PCS would be an erroneous decision which could undermine the efficiency and reliability of systems vital to operation and preservation of the Nation's critical infrastructure. As such, we oppose implementing the majority of proposals contained herein, because they have the effect of liberalizing the existing MAS rules.

In many parts of the country, applicants have had to put their business plans on hold for years awaiting availability of additional MAS channels in either the 928/952 MHz or 932/941 Mhz bands. Rather than employ the misleading data acquired by

screening previous applications for the 932/941 MHz band to assign spectrum, we propose that allocations in this band replicate the distribution by function of actual operating MAS systems.

The MAS spectrum is not, and should not be viewed as a panacea for all potential radio users. The MAS service was conceived and implemented to fill a highly specialized need, and has done so efficiently in the public interest, for many years. The exhaustion of available channels has stifled development of new and existing systems alike. The F.C.C. has the available spectrum resources and the authority to solve this problem if the focus on the MAS service is shifted from speculation to actualization.

Respectfully Submitted,

Washington Suburban Sanitary Commission

Kenneth Palumbo
Communications Maintenance Supervisor